ASC ENGINEERING FACT SHEET

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C-17 Advanced Quality System

DESCRIPTION

In the early 1990's, the C-17 program was in serious trouble. Costs were out of control and the aircraft that were being delivered were late and of poor quality. In 1994, an agreement between the DoD and the contractor allowed for some drastic changes to be made in an effort to save the program. A key piece of the new approach involved changing the quality management program. Practically everything on contract to date was thrown out and the program started over from scratch. The military specifications were elimi-

SUMMARY

Problem:

- The C-17 program was experiencing excessive production costs associated with rework and repair. The overall program "cost of quality" was unacceptable. Root cause corrective actions were not being taken, thus resulting in repetitive occurrences of the same defects.

Solution:

- Through an agreement with the DoD, the program embarked upon a radical change in the way quality assurance was managed on the C-17. The traditional Mil-Spec systems were eliminated and replaced with commercial systems. Many of these initiatives later became known across the DoD as acquisition reform measures.
- A number of advanced quality concepts were adopted and refined or tailored to the program. Upper management authorized these efforts to determine which practices were effective when applied to the C-17 and implemented those that proved to be of value to the program.

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nated and replaced with commercial systems. In addition, a number of advanced quality concepts were adopted and the whole program became known as the "Advanced Quality System," or "AQS." Modeled after Boeing's highly successful D1-9000, the system implemented programs such as process control, variability reduction, interface key characteristics, closed-loop corrective action, and process based management.

For a time, the program actually got worse. The production line slowed down even more as these programs were introduced. Management was skeptical as well as the workers. It was a tremendous culture change. Slowly, the production process began to improve. Out-of-station work became less and less. The delivery schedule started to improve. Costs started to come down. By the middle of 1994, C-17s were actually being delivered on time, rework and repair costs were improving dramatically, and the overall quality of the product was markedly better as illustrated in figure 1. Today, the program is delivering aircraft approximately 6 months early to contract with one of the lowest "costs of quality" of any aircraft currently being manufactured. Production span time as well as the fly-away cost of the aircraft has been cut in half. In 1997 the C-17 was awarded the "California Golden State Quality Award" for being the best of the state's large manufacturing enterprises. In 1998, the C-17 won the National "Malcolm Baldridge Quality Award" in the manufacturing category for large companies.

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